FIG. 1

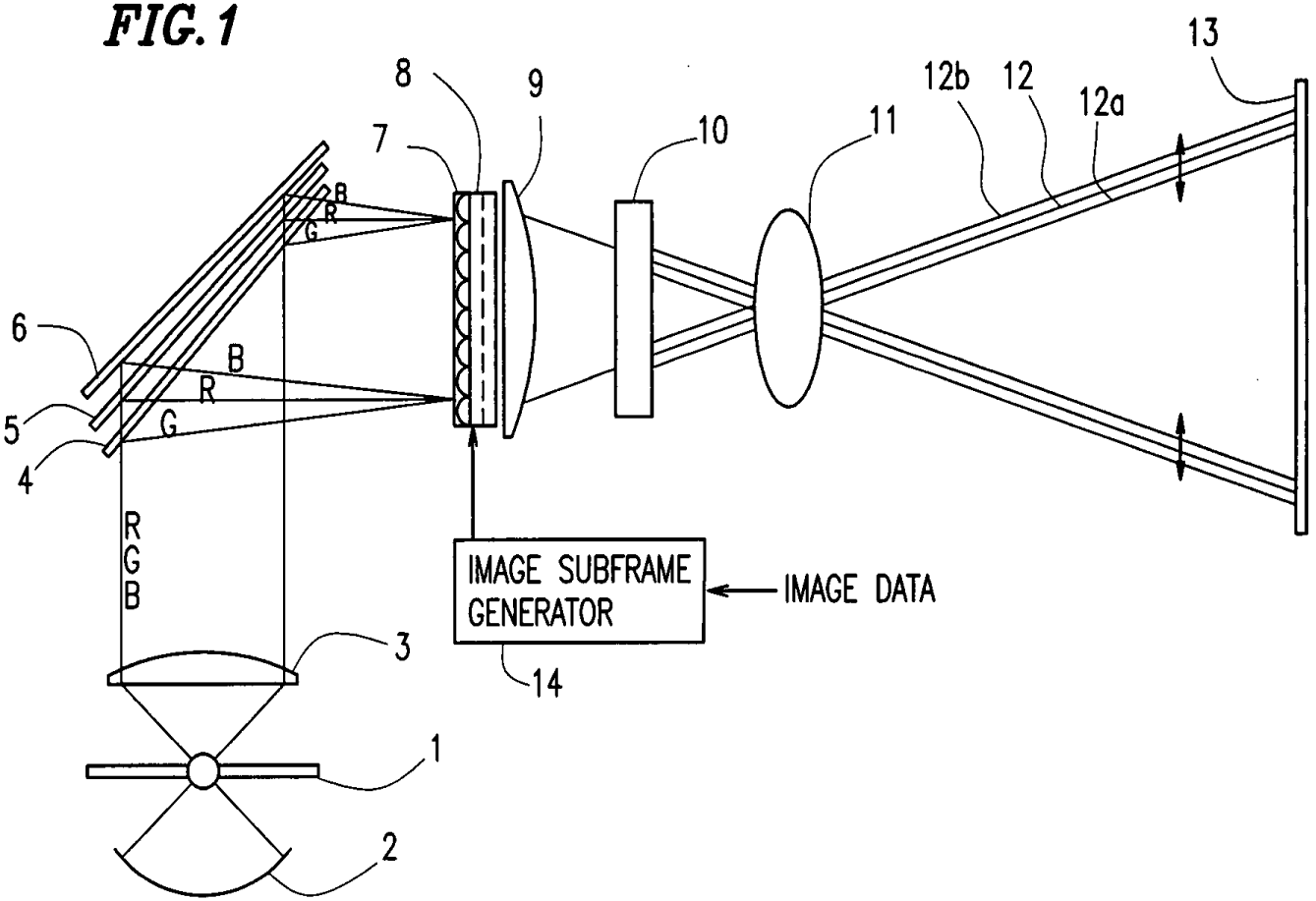

8
9
7
10
11
12b
12
12a
13
6
5
4
B
R
G
R
G
B
B
R
G
B
IMAGE SUBFRAME GENERATOR
IMAGE DATA
14
3
1
2

FIG.2

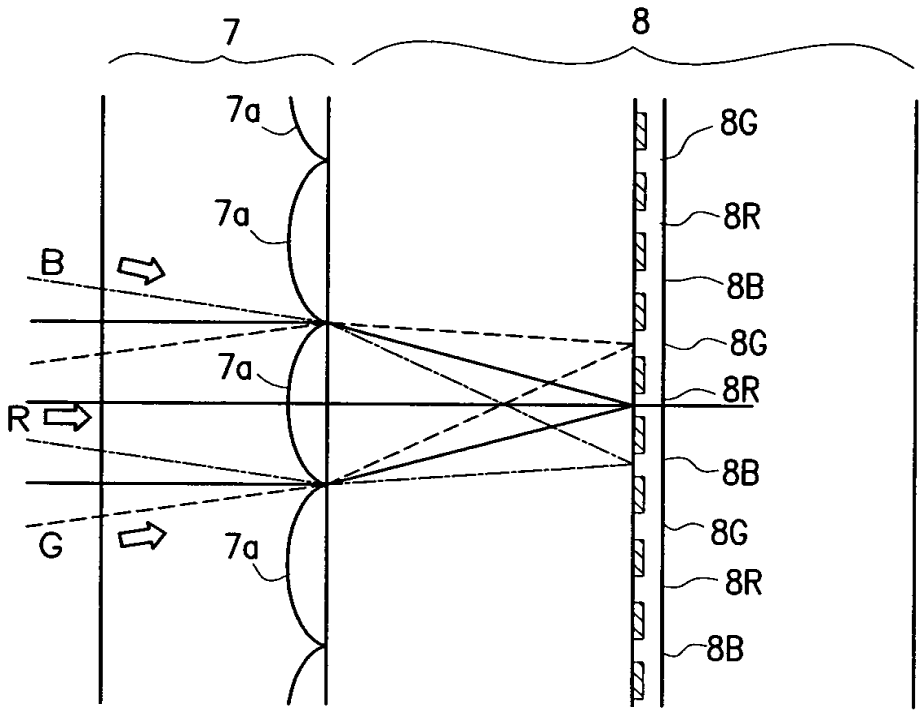


FIG.3

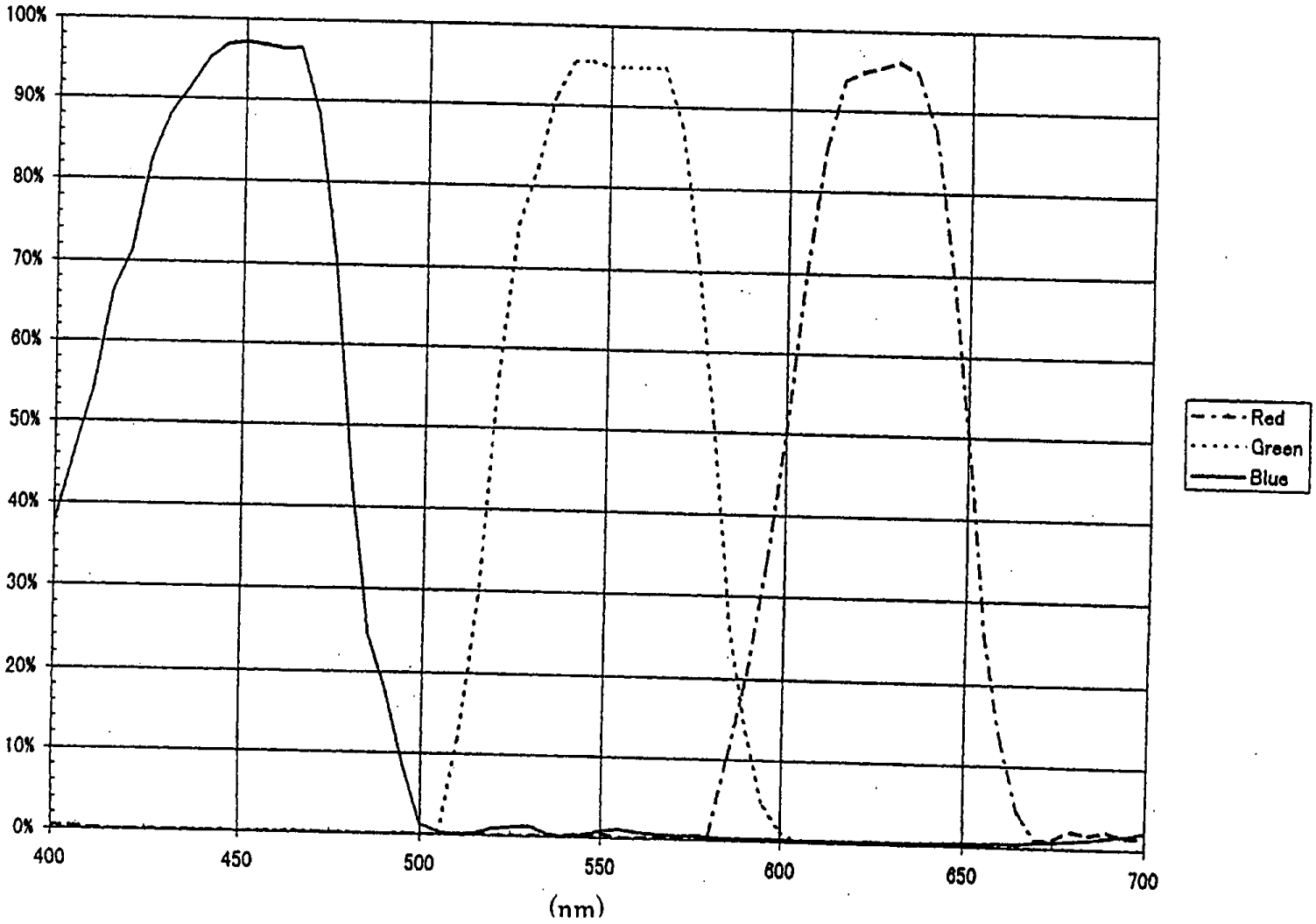

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
400
450
500
550
600
650
700
(nm)
Red
Green
Blue

FIG. 4

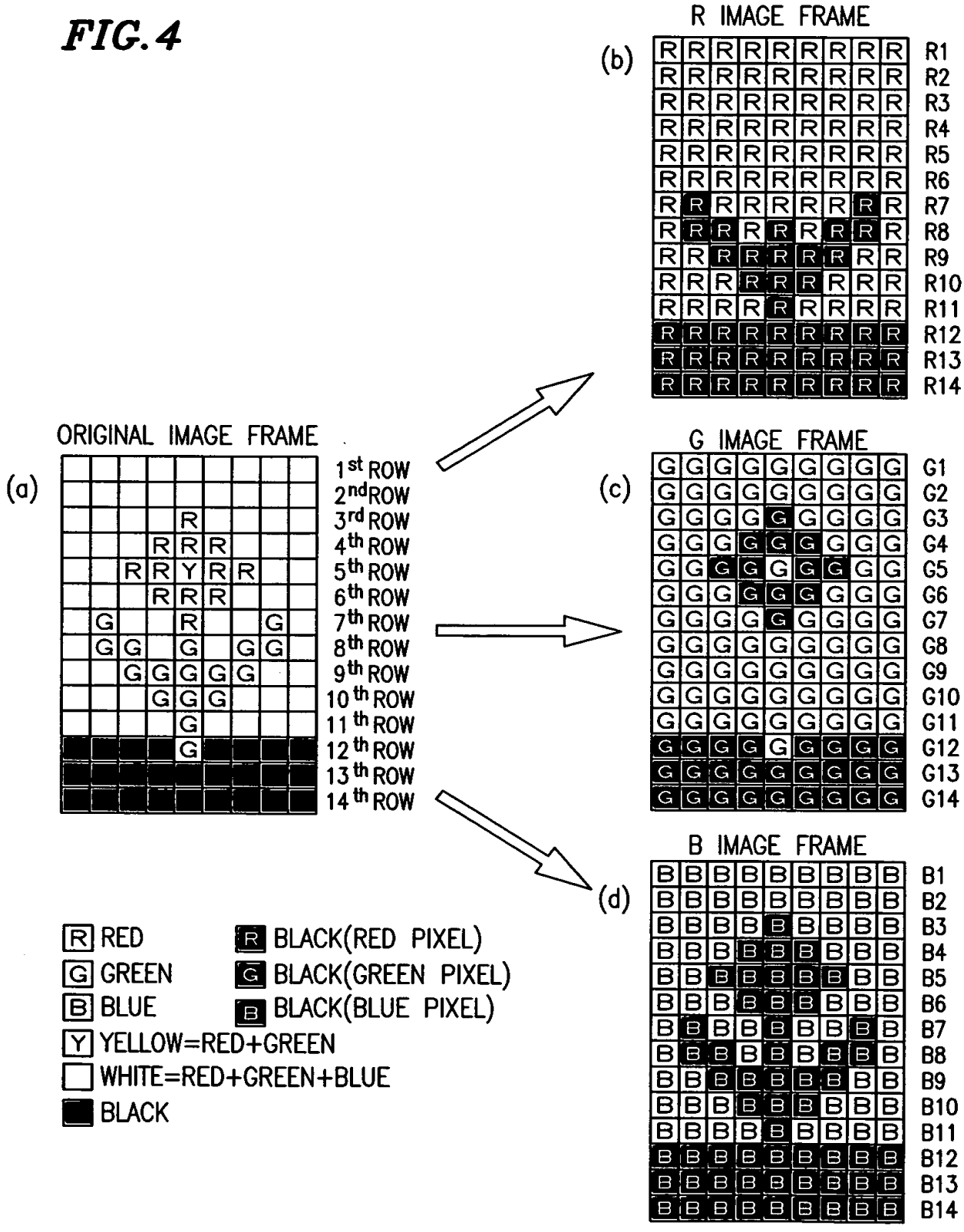

ORIGINAL IMAGE FRAME
(a)
1st ROW
2nd ROW
3rd ROW
4th ROW
5th ROW
6th ROW
7th ROW
8th ROW
9th ROW
10th ROW
11th ROW
12th ROW
13th ROW
14th ROW
R IMAGE FRAME
(b)
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
G IMAGE FRAME
(c)
G1
G2
G3
G4
G5
G6
G7
G8
G9
G10
G11
G12
G13
G14
B IMAGE FRAME
(d)
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
R RED
G GREEN
B BLUE
Y YELLOW=RED+GREEN
WHITE=RED+GREEN+BLUE
BLACK
R BLACK(RED PIXEL)
G BLACK(GREEN PIXEL)
B BLACK(BLUE PIXEL)

FIG.5

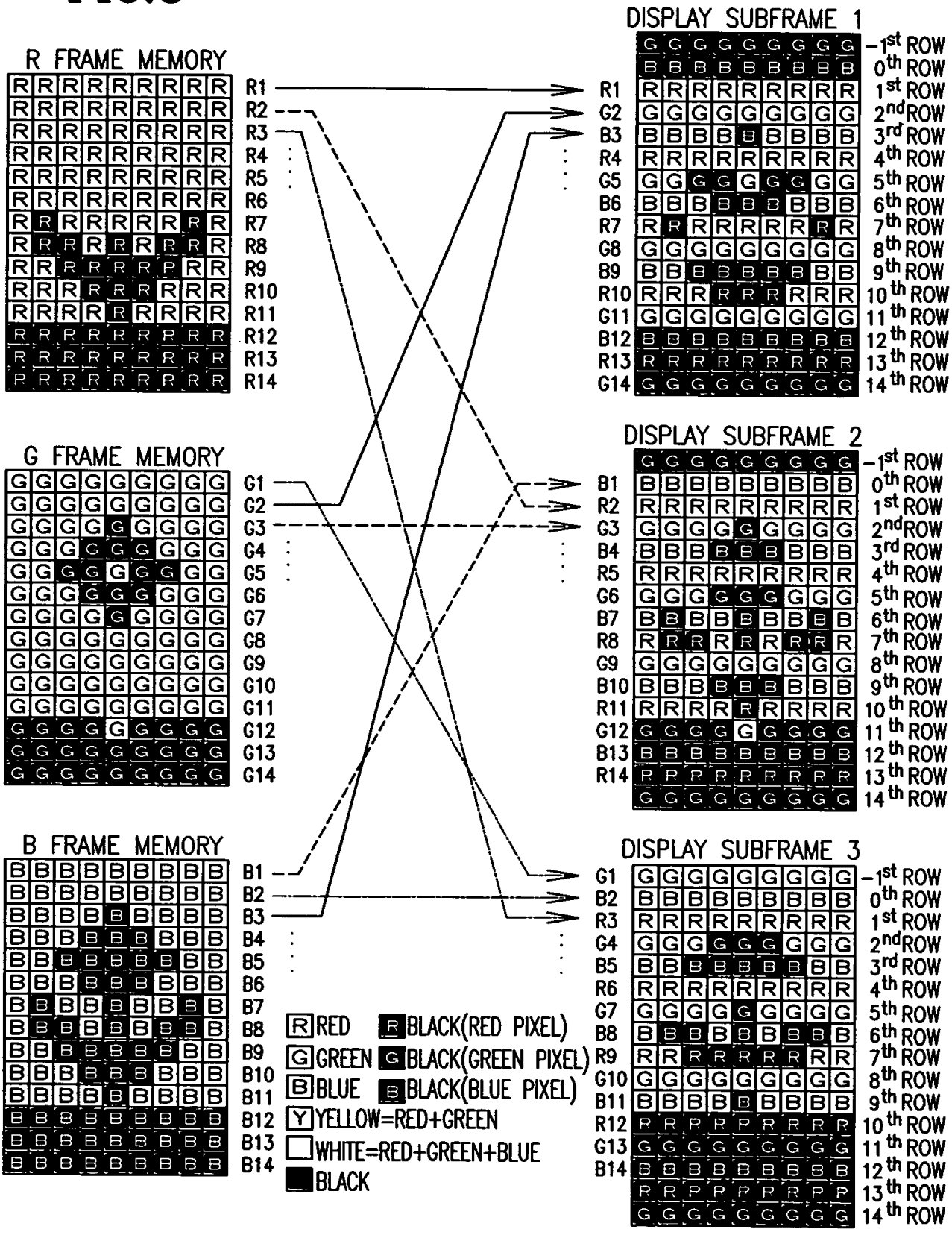

R FRAME MEMORY
G FRAME MEMORY
B FRAME MEMORY
DISPLAY SUBFRAME 1
DISPLAY SUBFRAME 2
DISPLAY SUBFRAME 3
R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14
G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12 G13 G14
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14
R1 G2 B3 R4 G5 B6 R7 G8 B9 R10 G11 B12 R13 G14
B1 R2 G3 B4 R5 G6 B7 R8 G9 B10 R11 G12 B13 R14
G1 B2 R3 G4 B5 R6 G7 B8 R9 G10 B11 R12 G13 B14
1st ROW
0th ROW
1st ROW
2nd ROW
3rd ROW
4th ROW
5th ROW
6th ROW
7th ROW
8th ROW
9th ROW
10th ROW
11th ROW
12th ROW
13th ROW
14th ROW
R RED
R BLACK(RED PIXEL)
G GREEN
G BLACK(GREEN PIXEL)
B BLUE
B BLACK(BLUE PIXEL)
Y YELLOW=RED+GREEN
WHITE=RED+GREEN+BLUE
BLACK

FIG. 6

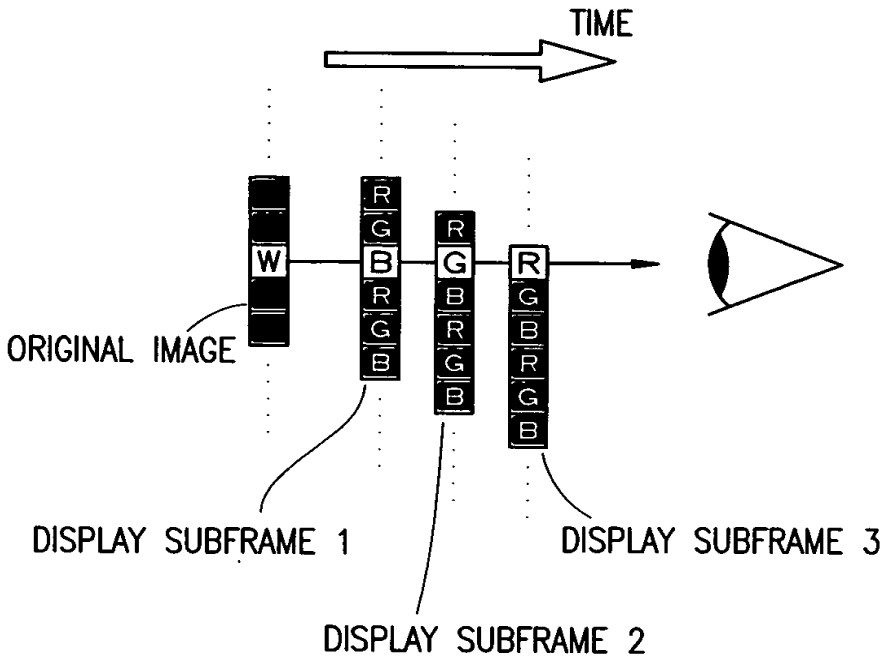

TIME
W
R
G
B
R
G
B
R
G
B
R
G
B
R
G
B
R
G
B
ORIGINAL IMAGE
DISPLAY SUBFRAME 1
DISPLAY SUBFRAME 2
DISPLAY SUBFRAME 3

FIG. 7

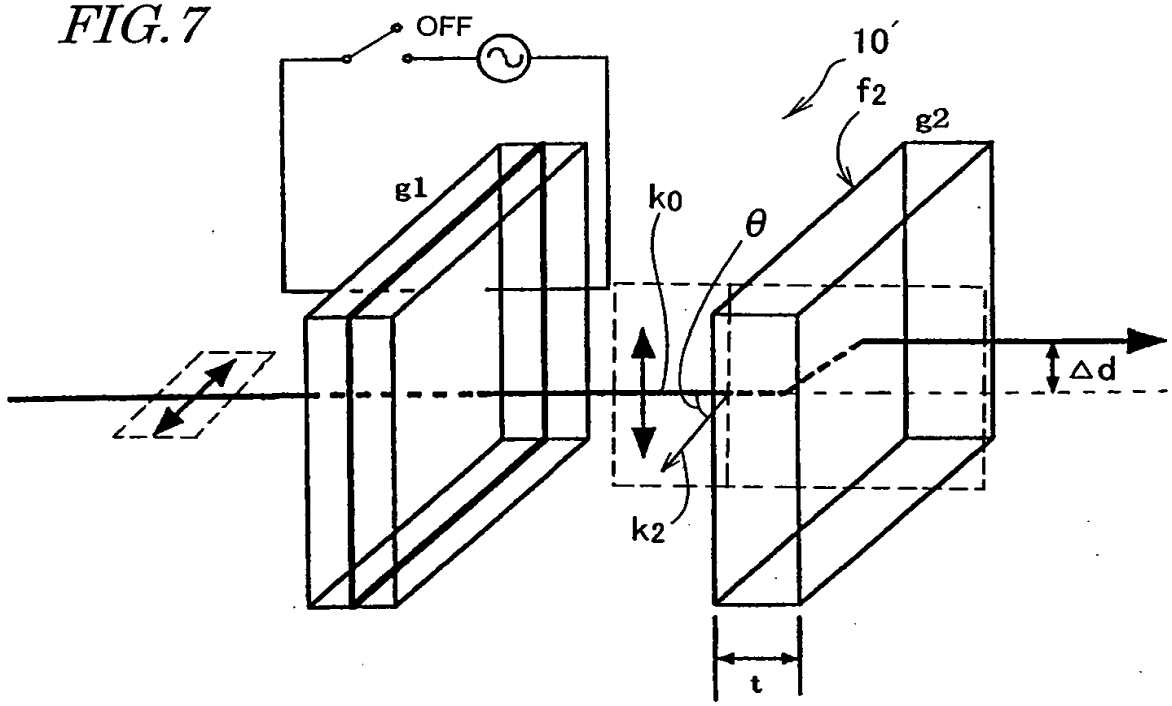


FIG. 8

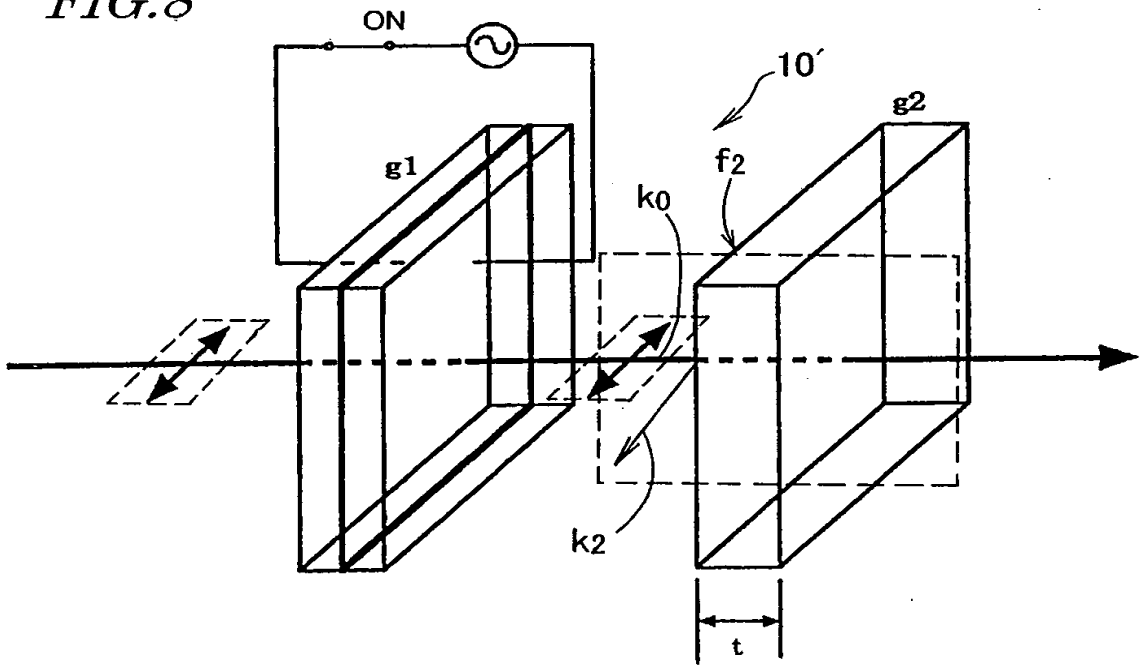


FIG.9

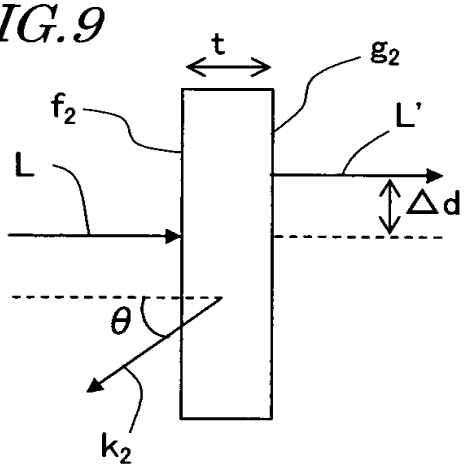


FIG.10

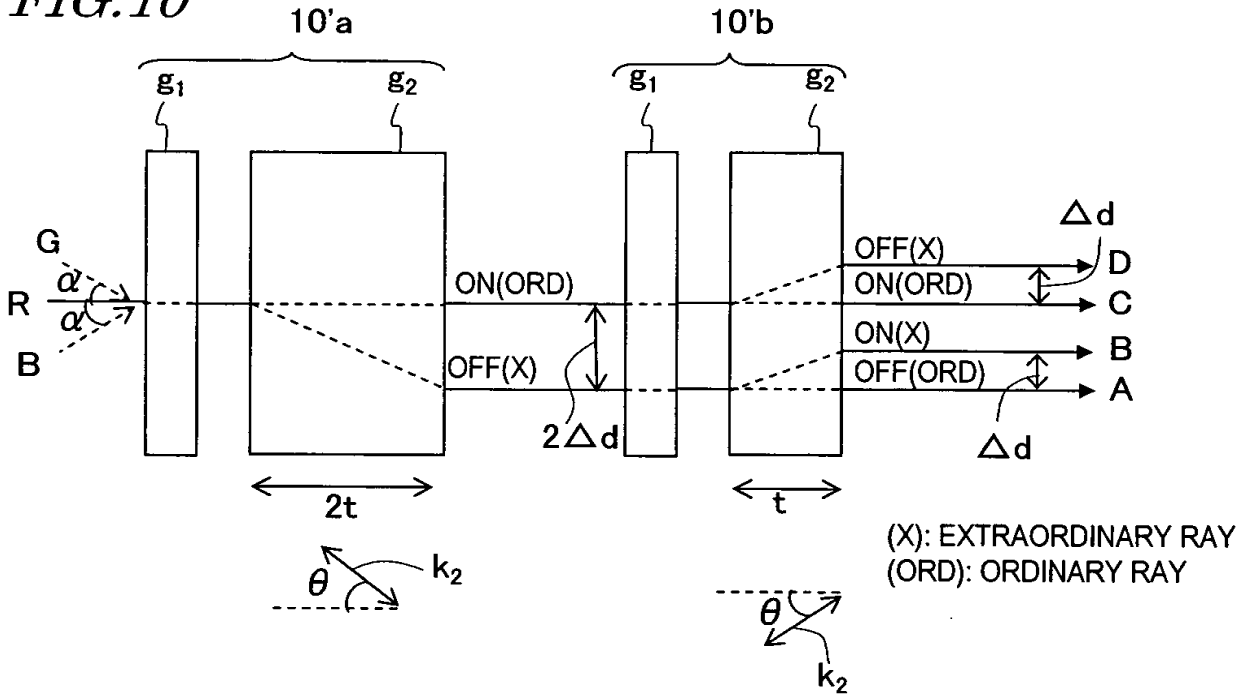


FIG.11

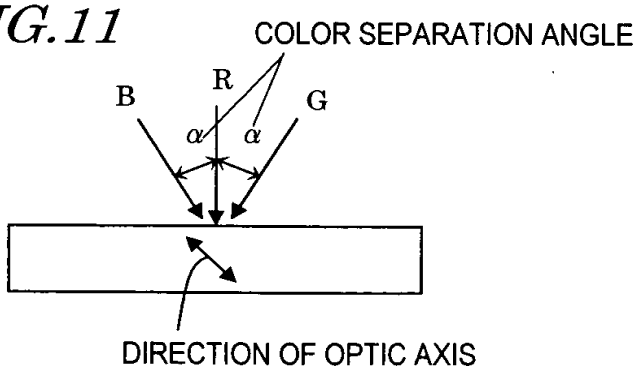


FIG. 12

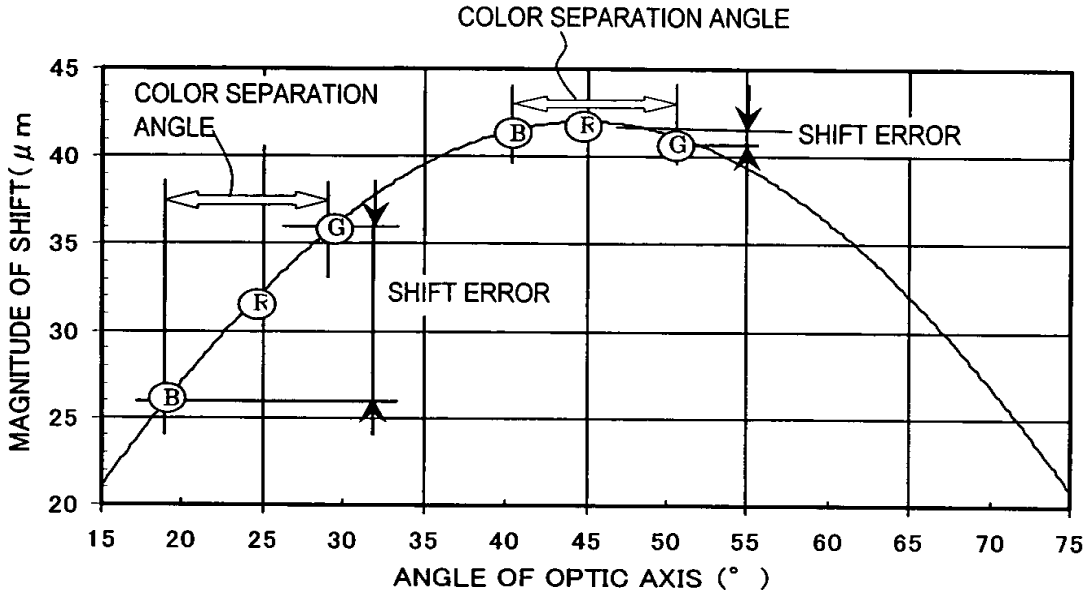

COLOR SEPARATION ANGLE
COLOR SEPARATION ANGLE
SHIFT ERROR
SHIFT ERROR
MAGNITUDE OF SHIFT (μm)
ANGLE OF OPTIC AXIS (°)
45
40
35
30
25
20
15
20
25
30
35
40
45
50
55
60
65
70
75
R
G
B

FIG. 13

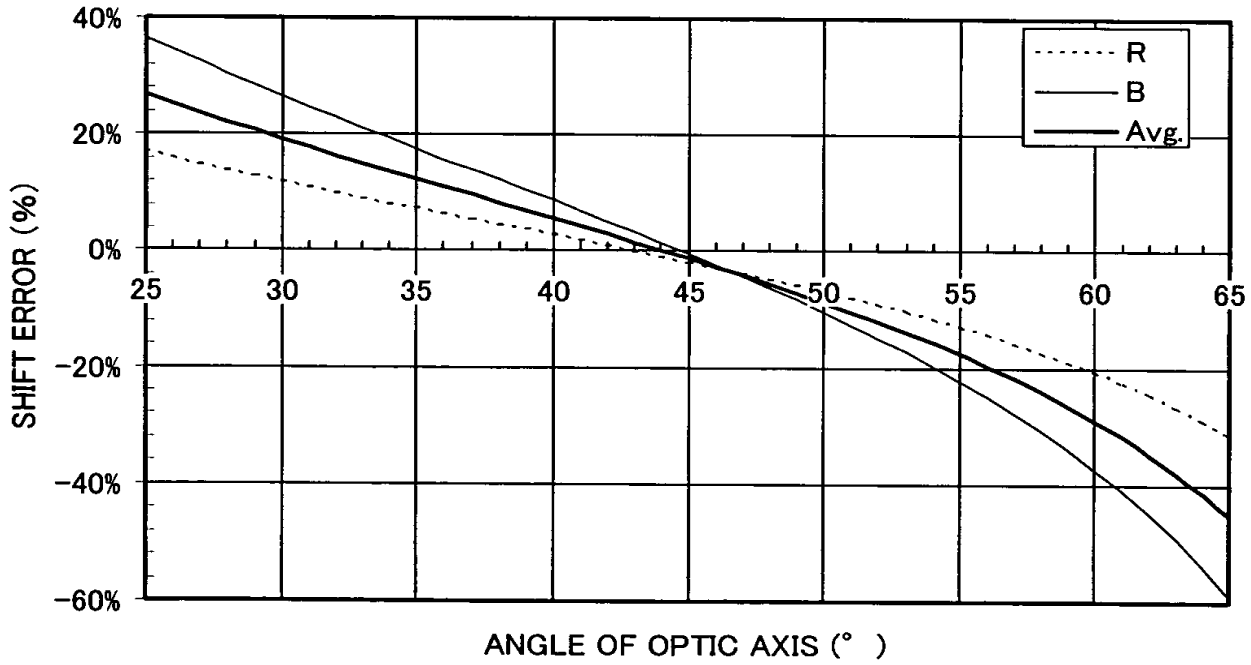
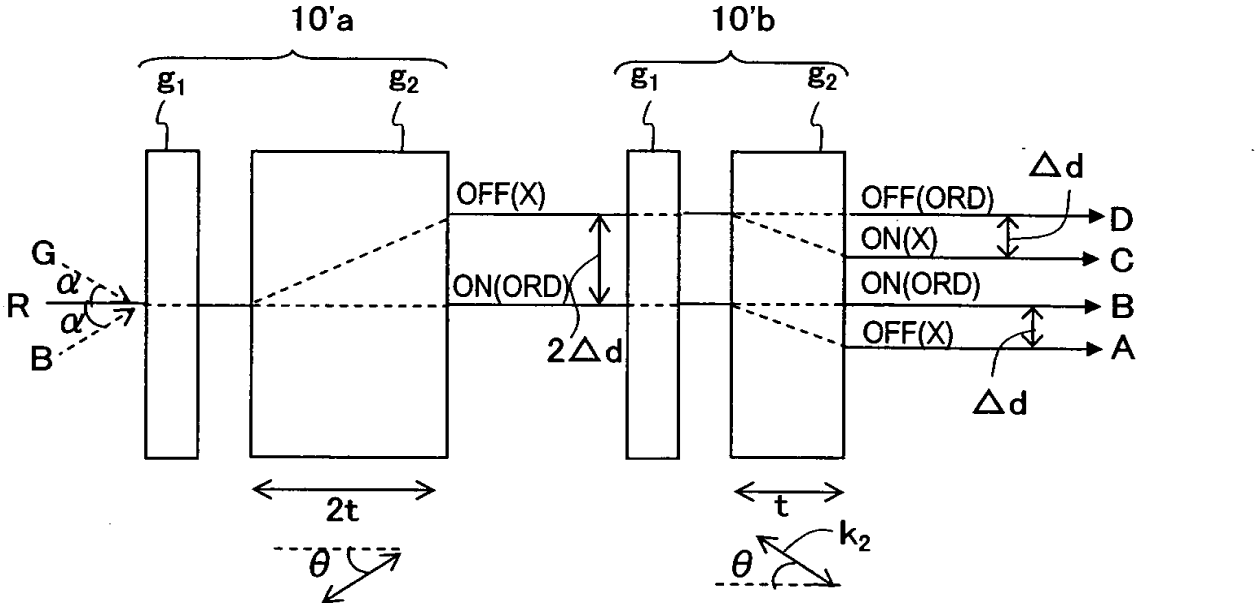

SHIFT ERROR (%)
ANGLE OF OPTIC AXIS (°)
40%
20%
0%
-20%
-40%
-60%
25
30
35
40
45
50
55
60
65
R
B
Avg.

FIG. 14



(X): EXTRAORDINARY RAY
(ORD): ORDINARY RAY

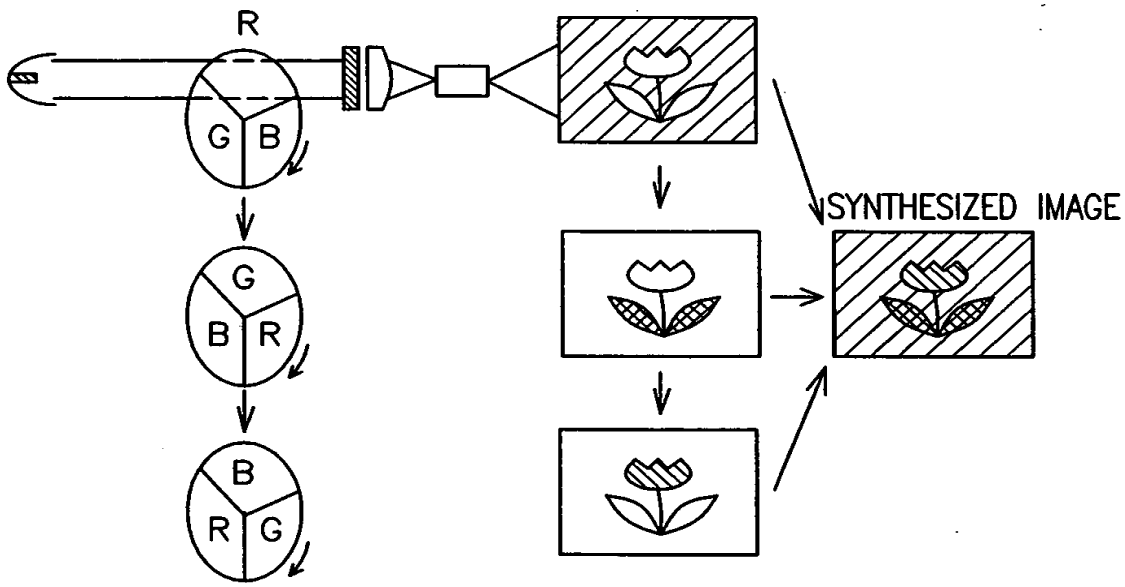



FIG. 15